THE MARINE RECORD.

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Maritime Law.

REVENUE LAW—FOREIGN BUILT VESSEL—IMPORTED ARTICLE—SHIPPING LAWS.

U. S. District Court, Southern District of New York.

The yacht Conqueror, a foreign built screw steamship, was purchased abroad by an American citizen and was navigated to this country and entered the port of New York. Then she was seized by the Collector of Customs on the claim that she was liable to duties as an imported article, under the Act of October 1, 1890, (26 Stat. at L. 567.) Her owner thereupon brought this suit to recover possession of the vessel. Held, that from the foundation of the Government, the duties on ships and vessels have been regulated by acts independent of the customs laws, and under a different system of legislation. Nor are vessels mentioned by name in any of the schedules or paragraphs prescribing duties. In the sense of the tariff laws therefore, such yacht is not an imported article, and is not subject to duties under the Act of October 1, 1890.

BROWN, J.

But for the Acts of June 29, 1870, (Rev. St., § 4216,) and of June 19, 1886 (24 St., at L., p. 82, § 11), there can be no question that this yacht would have been required to pay tonnage duties like all other vessels coming from a foreign port. She is plainly within the special statutes relating to duties on ships and vessels, and was, therefore, not within the scope of the general tariff upon imported merchandise.

By the Acts of 1870 and 1886 above referred to, Congress has exempted such yachts, not engaged in trade, from the payment of tonnage duties. The effect of this was not in any degree to extend the scope of the tariff act concerning imports, so as to make it applicable where it was not applicable before. The plain intent of Congress was to relieve such yachts from the prior burden of tonnage duty; not to increase their burdens or add any new ones. The reasons for it, if I am rightly informed, were for the improvement of navigation by the development of the finest models for speed, the free inter-communication between yachtsmen of different countries, their invitation to our shores, and the advantages to our own yacht builders to result therefrom.

It is urged, however, that though foreign vessels entering at our ports may not in general be subject to duty as imports; the case of the Conqueror is distinguishable from them in two respects; (1) That the former are treated by international comity as a part of the territory of the country to which they belong, and being here only temporarily, are by comity not considered as imports: (2) That the Conqueror presented her bill of sale at the Custom House and obtained the certificate of the Collector thereon, entitling her to the protection and flag of the United States, and that this act made her an import by change of domicile, and subject, therefore, to import duties.

If, however, the views previously expressed are correct, none of these suggestions have weight. They do not change the fact that the yacht was navigated to this port as a sea-going vessel, and hence liable to duty, if at all, under the shipping laws, and not under the laws applicable to imported merchandise. The circumstances stated do not widen the scope of the tariff law, nor change the class to which the yacht belongs nor transfer her from the one system of legislation to the other. After the bill of sale was made, she was none the less governed by the shipping laws alone, and but for the Acts of 1870 and 1886, she would have remained subject to tonnage duties precisely as before, whether the bill of sale was presented and certified at once or indefinitely postponed. The certification has not the effect ascribed to it. It contributed nothing to give the yacht an American domicil, or to make her American property. She was made American property months before by the bill of sale; and her domicil followed that of her owner. The certification did not make her a "vessel of the United States," nor give her the general rights or privileges of vessels of the United States. (The Merritt 17 Wall 582.) She could not enter into the foreign trade, nor into the internal or coastwise trade of the country (§§ 4131, 4311, 2497. The only use of the certification was to serve as "proof of American ownership" for her convenience in navigation as a pleasure yacht and to absolve her from the payment of "light money" (Rev. St. 4225 and 4226; The Miranda, Fed. Rep., 815; Sleight v Hartshorn, 2 Johns, 531, 545) She had already once before entered this port under the libelant's ownership and paid "light money," not having certified papers. If she was not liable to import duties before the certification, when navigated by the libelant as owner; there is nothing in the tariff act or in § 4226 that makes the payment of import duties either a condition or a consequence of such certification; and without that there can be no additional duties imposed.

As regards the other suggestion, it is not correct that foreign private ships are usually treated as parts of the territory of the country to which they belong. It is only public vessels that are entitled to that exemption. As to private foreign vessels the contrary is the rule. They are subject to all the laws and regulations enacted in regard to them by the country which they enter. It is under such laws that foreign vessels are required to pay tonnage duties, pilotage fees, and light money. That import duties are not exacted of such vessels, is not because of any legal fiction or international comity, but because they are not within the scope of the tariff laws on imports, and are dutiable according to the shipping laws alone. Had foreign vessels been within the scope of the tariff laws on imports, it is certain that the Government would not have foreborne to collect import duties on such vessels, either by reason of their temporary stay, or of any notions of international comity.

In my judgment nothing in the case removes the yacht from the domain of the laws specially enacted for ships and vessels, as to the dutiable charges thereon: and as by these laws she is released from the payment of the ordinary duties imposed on vessels, without being charged with any other duties or made subject to the general tariff law on imported merchandise, her detention for custom duties was illegal, and the libelant is entitled to a decree for possession, with costs and damages.

January 28, 1892.

An interesting case in admiralty was decided in the United States district court in Detroit last week by Judge Swan. The facts were as follows: On May 29th there was a collision on the St. Clair flats canal between the steamer John B. Lyon and the barge New Dominion, of the tow of the Canadian propeller United Lumbermen. At that time a dredge was working in the canal near the place of the collision, narrowing the canal for purposes of navigation. The Lyon, in entering from above, entered close to the west pier, sheered across, and struck the Dominion, forcing the latter against the dredge, breaking and damaging both the barge and dredge. On the part of the Lyon it was claimed the United Lumberman and her tow should have waited below the dredge till the Lyon got by, or passed eastward of where the dredge was working, instead of passing up the same side of the dredge on which the Lyon was attempting to come down. The United Lumberman claimed that the John B. Lyon was at fault for entering the canal before the tow got out, and was coming at such a great speed that she was uncontrollable, and for entering so close to the west pier that by reason of her proximity thereto she was caused to sheer. Judge Swan held that there was no fault to be attached to the United Lumberman and tow, and that the John B. Lyon was solely at fault, and must respond in damages to the New Dominion and also to the dredge. Assessment of damages was referred to the United States commissioner. It is roughly estimated that the damages are about $6,000.

UNITED STATES VESSEL INSPECTION SERVICE.

The committee appointed by the Secretary of the Treasury, to consider the recommendations of the U. S. delegates to the International Marine Conference, have prepared their report and been discharged.

Senator Frye has presented the report in the form of a Bill to the Senate, where it was read twice and referred to the Committee on Commerce. The Bill, in its several features, is a most comprehensive one, and deals with the Board of Supervising Inspectors, the Inspector General, the issuance of masters' and engineers' certificates or licenses, the inspection and equipment of sail as well as steam vessels, and the survey of a vessel's hull and rigging by a government inspector instead of the private classification firms, as in use at the present time. This feature is not considered necessary, however, if the vessel holds a certificate from the "Record of American and Foreign Shipping," whose rules have been endorsed by the government, and whose certificate shall be accepted by the inspector as direct evidence of the vessels class. A noticeable feature of the Bill is, that all inspectors who issue licenses must have a knowledge of navigation, and be familiar with the construction and equipment of a vessel. Also that all boys or men sailing for a livelihood are to be examined as to their visual power and their freedom from color blindness, a feature which our contemporary, *The Maritime Register*, of New York, has insisted upon as being essential for the better protection of life and property at sea.

In the matter of licenses, all those holding officers licenses within three years prior to the passage of the Bill, are to obtain a permanent certificate of servitude, such to remain in force until changed to a higher grade or forfeited by suspension or revocation by the power granting the certificate.

A most rigorous inspection for testing boiler material marks the chief departure from the present system, and deserves the closest attention of all concerned in this important industry. The method of examining candidates for engineers' licenses is also dealt with at great length, and if complied with, would place engineers in the merchant service of the United States, equal to, if not in advance of marine engineers under any other flag. The general features of the Bill are commendable, though possibly changes and amendments will be made in committee.

STANDARD TECHNICAL BOOKS.

	Regular Retail Price.	With The Marine Record one Year
Beeson's Inland Marine Guide	$1.00	$2.50
Law of Bills of Lading..	5.00	6.50
Patterson's Nautical Dictionary.	5.00	6.50
Drawing & Rough Sketching for Engineers by James Donaldson	2.50	4.00
Scott's Coast Pilot (new edition)	2 00	3.50
Simple Elements of Navigation	2.00	3.50
"Wrinkles" in Practical Navigation	6.00	7.50
Practical Seamanship	7.50	8.00
Thurston's Manual of the Steam Engine, part 1..	7.50	9.00
Thurston's Manual of the Steam Engine, part 2..	7.50	9.00

CLEVELAND VESSEL OWNERS' ASSOCIATION.

ORGANIZED IN 1880.

(Membership 1890.)

One hundred and thirty-eight steamers, and
One hundred and thirty-two sail and barge, } Aggregating 245,70[illegible] tons.

Maintains shipping offices at Cleveland, Ashtabula Harbor, Fairport and Toledo. Regulates wages, protects crews, and takes cognizance of all matters in the interest of the members and of the lake commerce generally.

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THE MARINE RECORD.—OFFICIAL PAPER.

NEWS AROUND THE LAKES.

CLEVELAND, O.

Engineer Thos. Sheehan, superintendent engineer of the Mutual Line steamers has been appointed engineer of the West Side and Woodland avenue street railroad. It is learned that Mr. C. B. Calder shore engineer of the Menominee Line will now attend to the Mutual Line steamers in addition to his former duties.

The Thew automatic cargo trimming shovels are now being turned out by the McMyler Manufacturing Co., of this city and it is expected that a number of them will be placed on board steamers in the ore trade on the opening of navigation.

It is rumored that Mr. H. Schanzlin, superintendent for the Lighthouse Engineer at this port and for the 10th district will resign from his lighthouse duties. Mr. Schanzlin has held this position for a period of twenty or more years, is an energetic faithful and well liked member of the service and regrets are expressed at his being changed from this port or that he should leave the service for which he has become so well fitted.

After ineffectual attempts to form a towing association of river tugs, it is learned that the several large owners can not come together on terms. River towing will therefore be carried on about the same as last season and owners of sailing craft need not rush to get behind a steam-barge on account of any increase in the river towing tariff during the coming season. The rumor of a combination has already had a partial effect as above, but the deal is now declared off.

Capt. J. Ferguson, representing the Chicago Stock Yards Market Co., J. B. Ruhland, president and general manager, paid Cleveland a visit this week in the interests of his firm. Captain James has visited all lower lake ports soliciting the vessel trade and his success in closing business has been above the average, from Cleveland he goes to Detroit and Bay City on his way home.

At the yards of the Globe Iron Works Company, the light house tender Lilac building for the coast service is getting well along toward completion. Mr. Janson, Superintendent of Construction for the Lighthouse Board, expects that she will be ready for launching in about two weeks. Work is also progressing on the several other vessels now on the stocks.

Byron Whitaker, the well known vessel owner of Detroit, was in the city on Tuesday upon vessel business.

Captain Westcott, Supervising Inspector of the Detroit district, called on several vessel men on Tuesday on his way home from Washington.

The eleventh annual ball of the Marine Engineers' Beneficial Association will be held at Haltnorth's hall, Friday evening.

It is desirable to make the fire boat more powerful as an ice crusher by giving her better engines.

Freights have been very dull this week, with little demand for tonnage, and a general weakening on previously quoted rates. $1.25 was the firm Ashland rate, though for midsummer trips this has now been shaded to $1.20. There is little or no enquiry for boats however, and a number of owners are waiting for the stagnation or lull to pass over.

The Wilson Line steamer Spokane, the first steel vessel built at this port, is now docked in the Shipowners' Dry Dock and will be lengthened about sixty feet by the Cleveland Shipbuilding Co. She will thus have the distinction of being the first steel vessel to be cut in two and receive another section at this port. The Spokane has been a successful money maker since she was built in 1886. The only other metal boat ever lengthened at this port was the passenger steamer Idlewild and the work was done by the same builders who are putting the section into the Spokane.

The propeller C. H. Green, now undergoing extensive repairs under the supervision of Captain Peter Edgar of this city, will have a consort, the Cleveland owned schooner F. A. Georger, instead of the Rosa Sonsmith and Mattie C. Bell, these two vessels have towed with the Green for the past ten years, or even since the fleet were built. The charterers of the Bell and Sonsmith will tow them probably behind the Orient Liners in the Lake Superior trade, with coal up and ore down. Capt. Duffy, owner of the Georger, will manage the tow at this port, and endeavor to give them the proper dispatch. Capt. John Geary will command the C. H. Green, this season. vice Capt. John T. Edgar resigned. The resignation of Capt. Edgar from the service which he has been brought up in, is on somewhat different lines than usual, as we learn that Capt. Edgar is gifted with a remarkably fine tenor voice and musical talent of a high order, he has already been offered a remunerative engagement in New York, where he is cultivating his fine natural gifts. From New York he will proceed to Italy, and after a course, "hang out his shingle" as a professor of music and voice culture. Rumor has it that the captain has a charming consort under convoy, who is similarly gifted, and under these circumstances any mariner might be excused from "swallowing the anchor."

CHICAGO, ILLS.

Special to The Marine Record.

C. F. Elmes is building three of his patent steam steerers for Buffalo parties to be placed on tugs at that port.

Capt. George Tebo returned Monday from the east. He had a very pleasant and successful trip, and is now in harness again for another season's work for the Independent Coal Dock Co. at this port.

C. W. Elphicke & Co. chartered the steamer Rhoda Emily last week for 40,000 bushels of rye to Kingston, p. t.

The steamer Raleigh was chartered last week by P. H. Fleming & Co., for 55,000 bushels of flax seed to Buffalo, at 3¾ cents.

Hiram H. Smith, of Buffalo, is spending a few days in this city on business connected with the Electric Refining Co., of Toledo, O.

Capt. Martin O'Malley was initiated as a member of the E. M. B. A., Chicago, No. 3 branch, at a meeting held Wednesday afternoon, February 10th.

Capt. J. E. Gardiner, of the schooner Evaline, was here from Kenosha last week on business.

Jacob Hanson, carpenter for the Vessel Owners' Towing Co., is doing lots of work on the fleet of tugs. The A. A. Carpenter is receiving a partial rebuild, comprising new frames and ceiling, new outside plank, new deck beams, deck, coamings and recalking. The J. V. Taylor has received new frames and ceiling, and outside plank forward and recalking. The Union is receiving new deck, shelf-piece and recalking. All the tugs will be put in first-class shape both as regards hulls and machinery, and two or more of them will be supplied with steam steerers.

C. E. Benham, vessel agent, Cleveland, paid this city a visit this week.

Capt. M. M. Drake, of Buffalo, was here on Monday.

Judge Bradwell is having a 55-foot keel sloop yacht built at this port.

J. J. Warde, of Chicago, has purchased the sloop yacht Atlanta, and will have her brought here from Belleville, Ont., when navigation opens.

The case of Hans Christianson's administrator *versus* the Dunham Towing and Wrecking Co., was decided last week in Judge Bretano's Court. The jury returned a verdict for $2,250 in favor of Christianson's estate.

Burton, Calbick & Cook have opened a vessel agency and underwriters office at 23 Sherman street. The office will be represented on the floor of the Board of Trade by Mr. H. W. Cook, who will have charge of the chartering business of the firm. Capt. J. A. Calbick will attend to the outside matters and will be in a position to attend to any wrecking business which may present itself. The insurance branch of the business will be handled by Mr. L. L. Burton, who is also a member of the firm of J. C. Burton & Son, general agents of the Cincinnati Underwriters for the inland marine department.

A despatch from Cheboygan Mich., dated February 15th. states: "After being out all of Saturday night, the jury at 5 o'clock yesterday morning, brought in a verdict of $14,000 in favor of the Cheboygan Lumber Co., for the burning of their property from a spark from the steamer Minnie M., belonging to the latter company." The Minnie M. had no spark arrester, this caused the loss, hence the suit, an appeal will be taken. WILLIAMS

BUFFALO, N. Y.

Special to The Marine Record.

The trial of Shipping Master Wm. Boyd, for shooting at an officer of the Seamen's Union here last summer, has resulted in the jury awarding the maximum penalty for assault in the second degree, namely, $1,000 or imprisonment from two to five years. Boyd will appeal at once. A stay of execution of the judgment was granted to Boyd by Judge Seaver pending the decision of the upper court, and the prisoner was let out on bail in the sum of $2,500, Marcus M. Drake and James J. H. Brown becoming his sureties.

The White Line Excursion Co. are building the Riverside and not William Murphy as reported in my letter last week, her correct dimensions are 96 feet long, 19 feet beam and 5 feet draft when loaded. Most satisfactory progress is being made on her and she will be fitted and furnished in a very superior style to any excursion steamer out of this port. The White Line Co. will have in commission next summer the Riverside, Ideal, Glance and Sport, with the barges Moonlight and Starlight.

A call has been issued for the third convention by the Canal and Harbor Protection Union of the State of New York for the purpose of considering measures for the protection and improvement of the State's waterways. It will be held in Albany on Wednesday, the 2d day of March. A general invitation is extended to all friends of the State waterways to attend. The object of the convention is to save the great Erie Canal and Hudson River transportation route from immediate destruction.

Late Saturday night as Capt. Reed, the veteran keeper of the lighthouse in the harbor, was on his way across the icefield from the island to the light, he broke through a patch of thin ice and sank into the freezing water up to his armpits. He called lustily for help, and Capt. Williams, of the Life Saving Station, William Williams, Jr., and surfman Gaskill went to his rescue. A rope was thrown over the drowning man's shoulders and he was drawn into safety. While engaged in the work of rescue surfman Gaskill broke through the honey-combed floes, and was in turn hauled out with the rope, though this is the second time that he has assisted in taking Capt. Reed from the water in an exhausted condition.

The barges Hattie, Elma and Superior have been attached by the deputy sheriff at the instance of G. B. Haines and others in one suit, and H. A. Noble and others in a second suit.

It is learned that about twenty loads of wheat have been taken by forwarders for shipment from Buffalo to New York next May via Erie Canal at 4⅜ and 4½ cents freight. These are the first contracts made for the coming season.

The Lake Pilots' Aid Association gave their eighth annual ball on Tuesday evening. The hall was decorated tastefully in red, white and blue, and the floor was covered with duck. Music was furnished by Kuhn's orchestra. The committees in charge were Messrs. G. F. Drury, Henry Kuhn, John Seebrook Henry Cronkhite, John Hogan, Fred Beecroft, R. A. Mallory, C. J. Grant, J. Golden, Frank Osborne, I. G. Bain, George Gibson, William Holtz, C. H. Gillespie, A. L. Smith, Malcom McLeod, P. McCormick, John Hogan, and Fred Schraft, as usual everything passed off successfully.

DETROIT, MICH.

Special to The Marine Record.

Frank Campbell and F. L. McDonald, of Duluth, were the lowest bidders for the construction of cribs for range lights in Ste. Mary's River. Their bid of $8,539 has been recommended for acceptance by the lighthouse engineer. The cribs will be built of wood and filled in with stone.

There has been a controversy in the local press recently about the speed of passenger steamers. W. O. Ashley, one of the managers of the Frank E. Kirby, takes exceptions to the claims of the new City of Detroit. In reply to a communication he states "the steamer City of Detroit is one of the most magnificent and finely equipped steamers ever on the lakes." I, however, claim the steamer Frank E. Kirby to be the fastest boat. We have no record of the Kirby between Detroit and Cleveland, as she has never been there. We have, however, records of speed between Detroit and Put-in-Bay which we claim to be faster than any time the City of Detroit ever made between those points, or ever can make. Capt. E. M. Peck, the veteran vessel builder and owner, who built one hundred vessels, large and small, when he was in that business in Cleveland, upon being interviewed by a reporter of the Detroit *Free Press* last summer, said: "The steamer Frank E. Kirby is the fastest boat now on the lakes." To use his own expression, "she can make more miles per hour than any boat I know." In July, 1890, the Kirby made the run from the Michigan Central railroad elevator to Bois Blanc light, a distance of twenty miles, in fifty-four minutes. In the month of August, 1890, she made the run from the Michigan Central elevator to Put-in-Bay in two hours fifty-five minutes. The return trip from Sandusky, including five stops and winding the boat at the bay, was made in four hours fifty-five minutes, a distance of eighty miles. I claim there is no other boat on the lakes that can equal the above.

Mr. Ashley also calls attention to an illustrated pamphlet on "The twenty foot channel," recently issued by W.

A. Livingstone, on one page of which appears a cut of the steamer Frank E. Kirby headed, "The fastest lake passenger steamer." As the copy bears an indorsement in the shape of the stamp of the Detroit Dry Dock Co. on the cover, as that company built both the Kirby and the City of Detroit, and as James McMillan is president of the Dry Dock Co. and the Detroit and Cleveland Steam Navigation Co., it would seem that Mr. Ashley's claim is established beyond question.

Captain Westcott, Supervising Inspector, has returned home after attending the annual meeting of the Supervisors at Washington.

Captain Byron Whitaker visited Cleveland this week.

Freights are seemingly dull again, and vesselmen are quietly awaiting later developments with the prospect of a demand for tonnage becoming more brisk.

PORT STANLEY, ONT.

Special to The Marine Record.

We do not make a great stir at this port in shipping matters, and our marine news is very limited. All that is being done here this winter is extensive repairs on the schooner H. P. Murray. The piers are also being rebuilt, and considerable dredging is to be done in the early spring so as to make our port navigable for good sized vessels. Besides the Murray, the Joe Milton, Ruby, and Snowstorm are wintering here, and logging operations are quite brisk.

A. E.

PORT HURON, MICH.

Special to the Maine Record.

The floating dock of the Wolverine Dry Dock Co., was towed down to their new quarters just below Sanborn's elevator. The offices of the company will remain in the old quarters until spring.

Capt. Fred Chamberlin has been in this city looking after the calking of the steamer Armour.

Capt. Pat Kirwin has sold his schooner Sligo to the Thomson Lumber Co., of Windsor, on private terms.

John Nesbett has purchased the propeller Canada, from Capt. Fairgraves, of Hamilton. The Canada will be used in towing Mr. Nesbett's coal barges from Toledo to Point Edwards this season.

Capt. Dan McLeod was in this city looking after the Insurance Company's interest on the steamer Hiawatha.

The following is the list of captains residing at this port and their appointments for the coming season: Capt. A. A. Cox, the City of Berlin; Capt. Alex. Sinclair, Simon Langell; Capt. Dan Sinclair, the City of Cleveland; Capt. Robert Gains W. H. Sawyer; Capt. A. H. Gains, Australasia; Capt. Chas. Black, Porter Chamberlin; Capt William J. Lynn, Canisteo; Capt. Harry Yealand, E. C. Pope; Capt. George Carter, O. D. Conger; Capt. Ed. Thomas, Hiawatha; Capt. Arthur Slyfield, White Star; Capt. William Hutchinson, Tampa; Capt. Dave Hutchinson, Iosco; Capt. John Ivers, F. W. Wheeler: Capt. Robert Thomson, G. E. Brockway; Capt. Wash Harrow, M. F. Merrick; Capt. W. W. Stewart, Dean Richmond; Capt. M. J. Madden, Nellie Torrent; Capt. Walter Ashley, Lehigh Steamer; Capt. Edward Anderson, Manitoba; Capt. John McArther, "A Whaleback;" Capt. J. C. Chambers, "A Whaleback;" Capt. Len Carrey, George Hand; Capt. Powers, schooner Churchill; Capt. Davis, Arenac; Capt. John Ward, Northwest; Capt. John Simes, steamer H. D. Coffinberry; Capt. Egbert, E. H. Jenks; Capt. L. Sinclair, schooner W. W. Stevart; Capt. George McLeod, M. A. Bradley's fleet; Capt. Sam Burham, steamer Mary; Capt. John Stevenson, H. B. Perew Capt. Andrew Rattray, Kittie M. Forbes; Capt. George McElroy, E. E. Tyson; Capt. James Van Slack, schooner Sonora; Capt. William Browlee, Hattie Wells; Capt. George Bonnah, Minnie Davis, Capt. Elliott, Melvina; Capt. John Cornwell, Tug Mystic.

Following is the list of engineers residing at this port and their appointments for the season of '92, N. L. Annis, 2nd, America; Arthur Armion, 1st, Toltec; George H. Bowree, 1st, A. J. Wright; Wilbor P. Boynton, 1st, Canisteo; Josiah Berney, 1st, yacht Say When; Thomas F. Burch, 1st, Colorado; James Carey, 1st, Charles S. Parnell; James Cameron, 2nd, City of Detroit; Robert Cameron, 1st, Kittie M. Forbes; Ransom Campbell, 1st, George Hand; J. H. Countryman, 2nd, J. V. Moran; Robert J. Close, 1st, Brazil; Livingstone Corner, 1st, City of Concord; George Charlton, 1st, Hiawatha; William Elliot, 1st, Osceola; Peter Finley, 1st, W. B. Castel; Fred Fitzgerald, 1st, Cuba No. 1; John Hogen, 1st, Dean Richmond; Geo Marrill, 1st, Mary; A. J. Holmes, 1st, Cleveland; Frank Hilton, 2nd, Dean Richmond; Dennis Karrigan, George Starbur; John Kinari, 2nd, Canisteo; H. W. Mains, 1st, Kittie Haight; S. G. Merrill, 1st, Pawnee; Harry Roundane, 2nd, W, B. Castil; H. W. Smith, 1st, O. O. Carpenter; James A. Southgate, 1st, Nelson Mills; Page Merrill, 1st, B W. Arnold; George Miller, 1st, Kalkaska; Walter Thom, 2nd New Orleans; Thomas F. Treleraw, 1st, W. H. Sawyer; A. J. Wilson, 2nd, Brazil; M. Jamison, 1st, New Orleans; George F. Lyne, 1st, J. V. Moran; Andrew Williamson, 1st, H. D. Coffinberry; L. Van Lew, 2nd, H. D. Coffinberry; E. Van Lew, 2nd, Pawnee; Joseph Codette, 2nd, Kittie M. Forbes; Lew Minnie, 1st, Samoa; Ed Harvey, 1st, Mystic; Thomas Walsh, 1st, Iosco; Ed Egan, 2nd, Iosco; Robert Buchan, 1st, Chamberlain; Lewis C. Purdy, 1st, Nellie Torrent; Harry Odett, 1st, Rhoda Stewart.

KINGSTON, ONT.

Special to the Marine Record.

Although the contract of the Connolly Brothers at the new Dry Dock has to all intents and purposes been fulfilled, much yet remains to be done in small details before the Dock can be said to be completed. The machinery put in by John Ingils & Son, Toronto, is as complete and perfect as possible. There are two large pumps which can be worked independently of one another, each pump capable of throwing 20,600 gallons per minute. By these pumps the dock can be emptied in one hour and seventeen minutes. There are two engines for moving the gates so that in case a breakage occurs to one of them, the other will be available. The arrangements for putting out fire are first class. At present there is but one boiler out of the four kept under steam, and the dock leaks very little.

One of the heaviest castings made in Kingston was turned out of the Kingston Foundry this week. It is a high pressure cylinder for the steamer Montreal of the R. & Ont. Navigation Co. It weighs nine tons and is a beautiful casting. Mr. A. E. Perkins, the head moulder, feels justly proud at turning it out on the first trial.

George Goodwin of Ottawa and O'Brien & Co. of Montreal are the successful tenderers for the new Soulanges Canal to be built on the north shore of the Cedar Rapids.

Evidently the Ogdensburg City Council do not want a bridge across the St. Lawrence. At a recent meeting they passed the following resolution: "Whereas a bill has been introduced into the legislature providing for the construction of a bridge across the river near Kingston; and whereas the said bill contains no restrictions as to the kind of bridge that may be constructed, or as to the facilities for allowing vessels to pass through and under the same; and whereas the best interests and prosperity of this city depends upon the free and unhampered navigation of the St. Lawrence river from Lake Ontario to this city; now therefore resolved that the common council of the city earnestly protests against the passage of the said bill, and requests the Senator and member from this district to use their best endeavors to prevent it becoming a law."

The Donnelly Salvage & Wrecking Co. have been notified that their tender for the removal of the wreck of the schooner Ryan, sunk near Deseronto, has been accepted by the Department of Marine. They will commence work as soon as the ice leaves the Bay of Quinte.

Hugh Ryan, the contractor who lately purchased the schooners Bangalore and Hyderabad, has put a large gang of men to work converting them into barges and doing a lot of needed repairs around the decks of both vessels.

Mr. S. Angrove, a well-known customs officer of this port, died at his home on Saturday after an illness of less than one week. Deceased was one of the most painstaking officials of the customs staff and was always ready to oblige mariners whenever it lay in his power. He was born and educated in this city, and until March 1888, was engaged in mechanical pursuits, leaving the machine shop to take a position in the customs. His brother, Capt. H. Angrove, has command of a fine steamer trading between Halifax, N. S. and St. Pierre-Miquelon, and only a few days ago concluded a brief visit to this city; the brothers have not seen each other before for twenty-five years.

All the lake steamers and barges of the Montreal Transportation Co. will be painted black this season, and their 32 river barges will be painted red.

The case of J. Swift and others vs the yacht Siesta has been settled, the plaintiffs accepting about fifty per cent of their claim which was about $3,000.

Very large repairs are being done to the steamer Maud in the shape of new deck beams and decks throughout. Mr. Marks foreman of the St. Lawrence S. Co. has charge of the work.

Mr. Thomas Milne, last year engineer of the steamer North King, has been appointed to a similar position on the steamer Alma Monro.

Mr. John Taylor has been appointed engineer of the steamer Orion.

Mr. Sam Mills was in town this week, pushing the sale of the Heeson patent furnace grate for which he is agent. Last year Sam was chief engineer of the Alma Monro, but has decided to try shore life for a while and we wish him success.

The steamer Armenia is receiving new top sides, deck frame, deck and bulwarks at Garden Island and the work is being pushed rapidly by Mr. Thomas O'Brien, foreman capenter for the Calvin Co.

MAGNET.

FLOTSAM JETSAM AND LAGAN.

John Charlton is suing Samuel Frazer and the British and Foreign Marine Insurance Co., in the Supreme Court for $1,006, which he claims is due him for services performed by his wrecking tug Onaping. Williams & Potter are his attorneys. Last year the schooner Bavaria, owned by Samuel Frazer, went ashore near Goderich, Ont., and the captain of the vessel, acting upon the advice of the agent of the British and Foreign Marine Insurance Co., in which company she was insured, sent for the tug Onaping and wrecking appliances. The tug worked for four day at the vessel, which Mr. Charlton says is worth the amount named.

Congressman Sawyer, from the committee on commerce, reported a Bill to repeal the act requiring life-saving appliances on steamers, so far as it relates to the carrying of line carrying projectiles and the means of propelling them on steamers plying exclusively on any of the lakes, bays or sounds of the United States. There is no doubt but that the Bill will pass.

The fleet of 19 steamers, which is the largest that has ever passed the winter at the head of Lake Superior, has a storage capacity of 830,000 bushels. The vessels, and capacity of each are as follows: A. D. Thompson, 67,000; barge 118, 93,000; schooner Northwest, 60,000; A. B. Taylor, 66,000; J. C. Gilchrist, 62,000; John M. Nicol, 68,000; John Harper, 70,000; John Mitchell, 71,000; City of London, 68,000; Alex. Nimick, 70,000; Eber Ward, 60,000; C W Elphicke, 75,000. There is no doubt but that this fleet will make as early a start as the ice will permit, yet their combined cargoes will only be a small portion of the fifteen million bushels, which, it is now computed will be ready to ship east on the early opening of navigation.

According to Secretary Foster's report, 204 vessels, amounting to 111,856 tons, were launched on the lakes during 1891. Iron vessels built at lake ports show a tonnage of 57,963 to only 46,265 tons built on the Atlantic coast. The documented tonnage on the northern lakes, June 30, 1891, was 1,152,870 tons; on Western rivers, 308,348 tons; on the Pacific coast, 440,858 tons; and on the Atlantic and Gulf coasts, 2,780,683 tons. On the Great Lakes alone (without counting wharves, elevators, shipyards or other plants connected with shipping) the aggregate valuation of vessels is $58,123,500, equivalent to 22.6 per cent of the total ton mileage of railways in the United States.

A contributor, writing to one of our foreign exchanges, asks if there is a law in the United States which makes a shipowner liable for more cargo than is put on board his vessel, or in plainer language, is he answerable in such a case for short delivery. The reply states "The American law on the liabilities of carriers is the same as that enforced in the United Kingdom. The quantity mentioned in the bill of lading is conclusive evidence of shipment, unless it can be proved satisfactorily that all the cargo taken on board has been delivered. In Stedman *v.* Naylor, Supreme Court of Massachusetts, March, 1856, a bill of lading with "weight unknown" did not bind the shipowner, in the absence of fraud, to deliver a greater quantity of iron than received. The District Court of Massachusetts, on a suit for freight, ruled that as all the coal shipped had been discharged there could be no deduction for alleged short delivery."

The Pontiac-Athabasca collision case has been settled out of court.

Capt. Joseph Braman, harbormaster of the port of Milwaukee, died Monday. Capt. Braman was sixty-eight years old, and had been a resident of Milwaukee for many years. He commanded some of the best sailing vessels in the early days of lake navigation. He was appointed harbormaster in 1890, succeeding Capt. James F. Trowell.

The Blakeslee M'f'g Co., Du Quoin, Ill., manufacturers of steam pumps, are evidently not allowing any moss to grow in the vicinity of their works. Their large and growing trade has assumed such proportions as to compel them, in the interests of their trade, to open up an office and salesroom, at 419 Walnut street, St. Louis, Mo. Their line of steam pumps are among the best on the market and their facilities for supplying the marine trade unexceptional.

W. F. Street, city statistician of W. Superior Wis. and editor of the *Inland Ocean*, has fairly eclipsed all previous efforts in the masterly handling of statistics for the year 1891. The Sunday issue of the *Inland Ocean*, February 14, is a masterpiece and is justly entitled to circulate over the length and breadth of this wide land.

LEGISLATION AFFECTING THE MERCANTILE MARINE.

A bill has been introduced in the Senate by Mr. Haynes to amend 3117 of the Revised Statutes of the United States, in relation to the coasting trade of the Great Lakes.

By Mr. Sawyer, to repeal the provisions of an act entitled "An act to amend sections 4488 and 4489 of the Revised Statutes, requiring life-saving appliances on steamers," approved March 2, 1889, so far as they relate to steamers plying exclusively upon any of the lakes, bays, or sounds of the United States.

By Mr. Enochs, authorizing the Secretary of War to cause a survey to be made for a ship canal connecting the waters of Lake Erie and the Ohio River between the city of Cleveland and the city of Portsmouth, Ohio.

By Mr. Fithian, for the free admission to American registry of ships built in foreign countries.

By Mr. Buchanan, of New Jersey, to abolish tonnage dues upon American shipping.

By Mr. Cogswell, to regulate the import duty on yachts intended for pleasure purposes.

By Mr. Burrows, making an appropriation for the improvement of St. Joseph river, in the state of Michigan.

By Mr. Burrows, making an appropriation for the improvement of the harbor at South Haven, Mich.

By Mr. Hooker, to provide for the improvement and survey of the Dunkirk Harbor.

By Mr. Payne, directing a survey for a harbor of refuge in Mexico Bay on Lake Ontario, New York.

SHIP CONSTRUCTION.

THE ACCOMPANYING ILLUSTRATION HAS something new in improved ship-building, having extra strength, with economy in construction, power to propel, and simple contrivances for time-saving in handling ship and cargo. This vessel has a humped top about one fourth higher from the keel amidships than at either end. The ends being comparatively small to bulky middle section, which contain crew's quarters in upper part of hump amidships. See Fig. L.

Crowning deck, with beam and a half as radius for segment deck. The planksheer corners rounded. Hatches built for self trimming with center double strengthening stringer, arch and bumper, for grain or ore. See J. Fig. 2, open hatch, swivel, strong back ready for putting hatch on.

A midship bridge platform and skid structure for boats, which will not interfere with loading chutes, supported by ventilator shafts and companion way, steam-steering machine house, also for pumps hauling and blower. Steel gun boat, skylights handled from engine room, fresh air supplied circulating through the large ventilators amidships, cabin passages, engine room, fire hole, skylights, or in such stormy weather that skylights had to be closed, artificially from blower through cabin port passage, engine room, starboard passage to starboard ventilator. A pipe rail, force pump pipe for rail on one side, covered steam pipe for rail on the other. Port anchor constructed with two independent duplicate loose soft ground flukes, pinned to shank through cast steel strap, which has four rock catches heaving into hawse pipe, automatically secured, making less trouble to let go the anchor and heave it up again than to get out a line to the dock and haul it in. Iron wedge securing hatches over rubber gaskets layed in slot between angle irons of the coaming.

Fig. 1. Represents a side view of a steamer showing hump and bridge above. The shank of port anchor hove up in the hawse pipe secured by compresser. T. triantic stay tohang grain spout tackles on, V. ventilator, W. steam winch steering house with spools outside for hauling. Door on port side companion-way to bridge or cabin. L. dotted space for crews quarters. Stern only large enough to conveniently handle sector on after side of rudder stock.

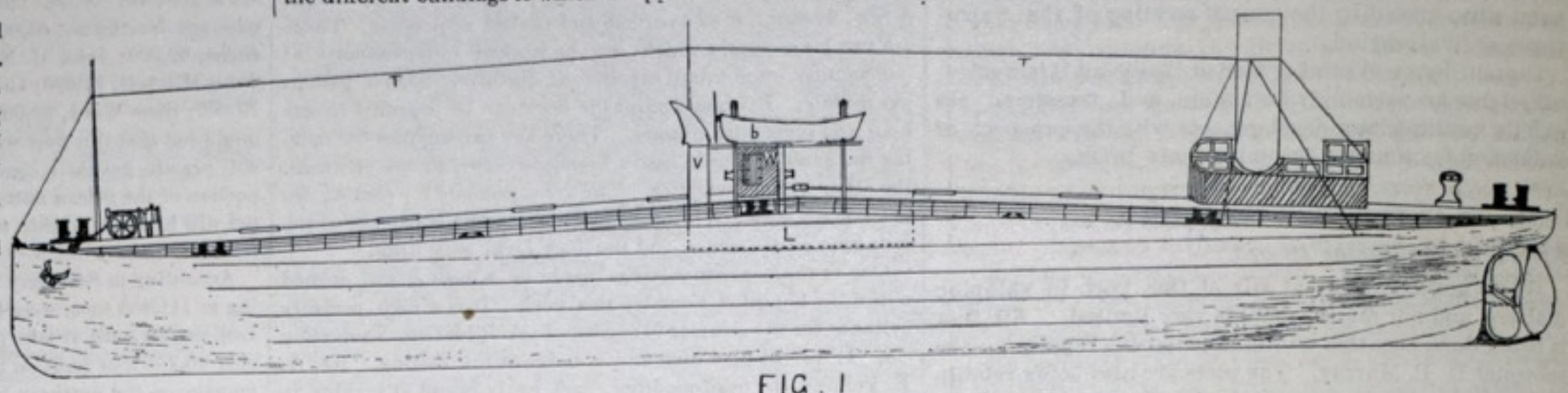

FIG. 1

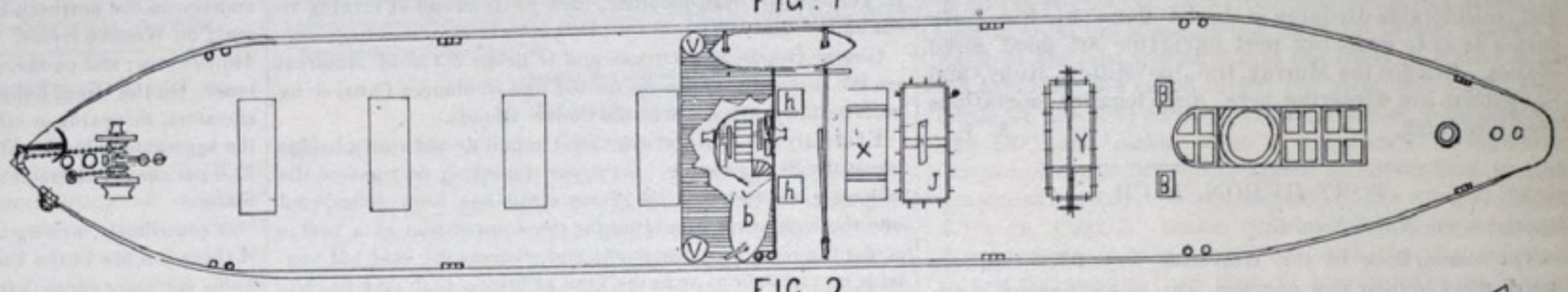

FIG. 2

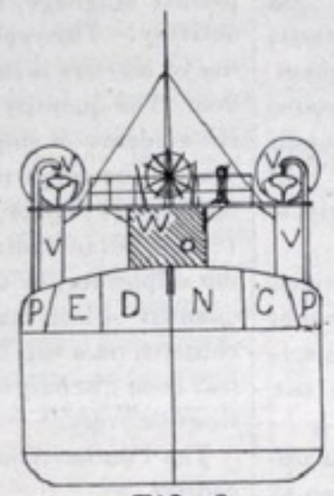

FIG. 3

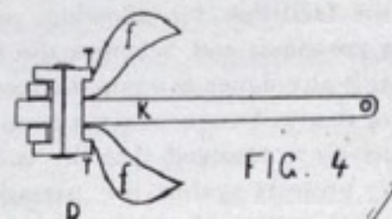

FIG. 4

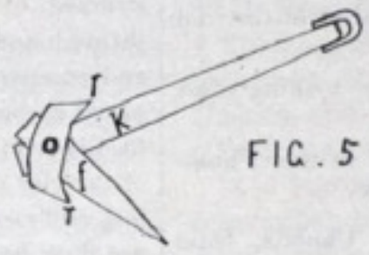

FIG. 5

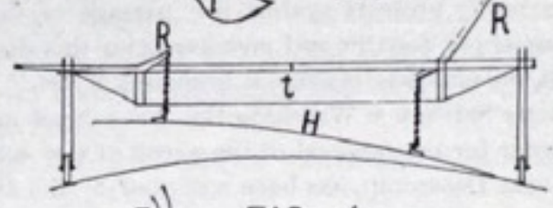

FIG. 6

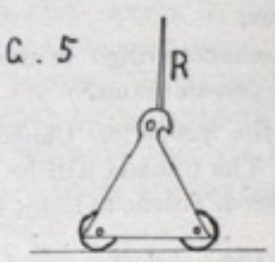

FIG. 7

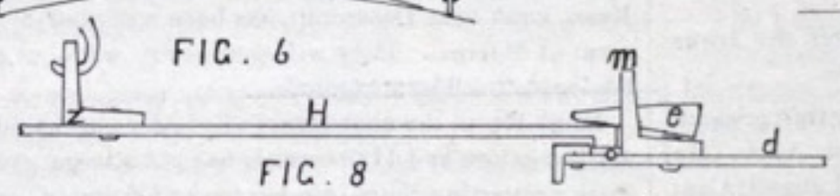

FIG. 8

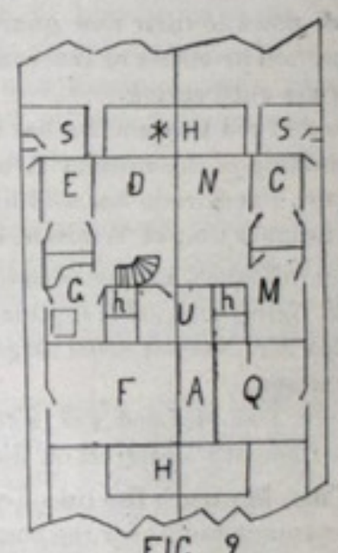

FIG. 9

Fig. 2. A deck view, steam windlass with large and small end, B. port boat with stern rolled around over bridge so as to work loading chutes in HH loading hatches, and cut away with part of the bridge to show plan of steam steering winch and companion-way, X. hatch lifted off, J. open hatchway, Y. traveling car hatch lifter across hatch, BB. bunker coal hatches. Fig. 3. Cross section through cabin and bridge, showing hand steering wheel and levers for steam steering, PP. passages to engine room below deck. Fig. 4. Top view of anchor laying on the ground. Fig. 5. Side view after being drawn into the ground, K. shank, F. flukes, R. rock catchers on cast steel strap. Fig. 6. Lever raising traveling car hatch lifter. Fig. 7. Side view of the same, H. hatch, T. trussed pipe, RR. levers for raising hatch. Fig. 8. Iron wedge plan for battening hatch, Z. angle iron fore and aft on hatch for lifting hook, M. angle iron with slots holding wedges always fast for securing hatches down, O. rubber gasket, D. deck. Fig. 9. Plan of cabin with two HH. loading hatches running down through *, H. forward hatch, SS. store rooms, HH. hatches, E. engineers room, D. dining room, N. cabin, C. captain's room, G. galley, M. mates room, F. fireman, coal passers, deck hands room, U. steward, boy, A. water tank, Q. quartermasters, oilers, watchmen. If a tow barge F. a donkey boiler room.

H. J. Hatch patentee of the new features, who has been master on the lakes and ocean would like to take stock with capitalist and build on the above principle. Address 651, 37th street, Chicago, Ill.

TRANSMISSION OF POWER BY ELECTRICITY.

The transmission of power in mills by means of costly belting, pulleys and shafting, and, in hundreds of cases, by steam pipes radiating from a boiler house to scattered auxiliary engines, has long been considered a costly and more or less unsatisfactory meahod. This consideration is becoming stronger and more widespread as the adaptation of electricity for the transmission of power progresses towards further development and becomes better known. Mill owners, iron masters, spinners, carpet weavers, and others engaged in manufacturing, who are now obliged to depend upon engines, with their accompanying evils of loss of power, dust, oil, strong smells, danger from fire, etc., are asking themselves if it is not possible to adopt some other methodofpower generation and transmission which will do away with the various disadvantages inseparably connected with this system. Various minor attempts at the utilization of electricity to operate mill and mine machinery at a distance have been made within the past few months, but no experiment on a really grand and extensive scale has been undertaken until quite recently. The Edison General Electric Co. seems to have the distinction of being the first to solve the problem in a comprehensive manner. The transmission of power from one central power house, containing all the boilers and engines to the 40 and more different buildings which go to make up the Schenectady works of the Edison Co., has attracted attention from all sides. A New York publication "Power," chiefly devoted to mechanical interests, considers the matter of so great importance, that, in its February issue, it gives a full and graphic description of the manner in which the elimination of the various defects mentioned above, is effected.

The power house is situated almost in the middle of a piece of land 12 acres in extent, and is surrounded on all sides by the different buildings to which it supplies the necessary power. This house contains a battery of boilers of over 2000 h. p. capacity, the engines necessary to drive the electric generators, and the generators themselves. Radiating in all directions run the conductors through special Edison underground tubes to the different buildings where they are connected to Edison motors, which in turn are connected by belts to the shafting serving to operate the machinery. By the adoption of this method, the general aspect of the interior of the buildings is entirely changed. Formerly there stood in a corner of each building a small independent engine connected by steam piping to the boiler house, giving off its superfluous steam, smelling of lubricating oil, and raising the temperature occasionally to an unbearable degree. Now in the place of the engine, and occupying, perhaps, less than a quarter of the space, is a small motor,, a switchboard and a regulator. One throw of a small switch lever, the motor is running noiselessly, and the whole machinery in the building is in motion. There is no trouble, no engine on center, no steam, no smell and no dirt. The attention required by the motor is very slight, and one of the workmen looks after it without allowing it to interfere with his ordinary occupation to any appreciable degree. The machinery in the 40 odd buildings, operated by the motors, drawing their motive force—electricity, from the central power house, gives employment to over 3,500 men. Electricity is also conveyed along the wires to the different testing rooms where all kinds of electrical power apparatus is continually under delicate test. In addition, the two largest machine shops, properly so called, where the big Edison dynamos and their smaller brothers are assembled, and the foundry, are each equipped with travelling cranes, which are operated exclusively by means of electrical motors. These are so constructed that they respond immediately to the slightest desire of the motor man, and are capable of raising and transferring immense weights with ease and rapidity. Here also are to be found the huge shears for cutting iron, and the large and smalll trip hammers, all owing their working ability to electricity generated at a point many hundreds of yards distant.

In addition, "Power" gives the following facts in figures:

The Power plant comprises an Armington & Sims 10 x 12 engine of 150 h. p., driving one 100 Kilowatt Railroad Generator and two 100 Kilowatt Standard Generators, and another Armington & Sims engine of same proportions, in reserve, coupled to one 50 Kilowatt and one 100 Kilowatt Generator. A small engine of same make of 25 h. p. drives three 8.5 Kilowatt generators, There are also two 300 h. p. Edison Triple Automatic Engines, each driving two of the new Edison 100 Kilowatt Multipolar Dynamos, and a 150 h. p. Triple Automatic engine driving two 60 Kilowatt Generators of former standard Edison type. The boiler battery consists of three boilers of 500 h. p. each, and three of 250 h. p. each, making a total of 2250; this will eventually be raised to 3000 h. p. when the three additional 250 h. p. boilers are put up. The present generator or dynamo capacity is about 1000 Kilowatts. This will be increased to 1400 Kilowatts as soon as possible and the normal capacity of the power station will then be 1900 h. p. The normal output is about 950 h. p. at the present moment, but this is increasing as the new shops go up. The present floor area of the Schenectady Works is 11.84 acres. Current is distributed to 43 motors of standard Edison type which would represent a capacity of 1,324 Kilowatts it run to their full capacity. About 20,000 feet of single conductor wire is used to convey the power from the central house to the motors and this does not include the wiring of the buildings or the conductors laid in Edison underground tubes. The voltage of the motor circuit is 250 volts, the lights running on 125 volt circuits. The loss of power in transmission is small when compared with the enormous loss when steam was conveyed to the small independent engines in the scattered buildings.

Thus it will be seen from the foregoing that from the points of view of both economy and expediency the days of the universal use of steam alone in power transmission, are numbered. The impetus has been given to a new departure, and the progressive ninteenth century ideas will effect the rest.

A CANDID ANNOUNCEMENT.

In a letter to THE MARINE RECORD, under date of February 16, 1892, the Silver Bronze Packing Co., 115 Liberty street, New York, state: "We learn that some makers of metallic stuffing for stuffing boxes, have gone about reporting that Forrest's Silver Bronze Packing, has been taken out of some engines and their stuffing put in in its place. We desire to state in the most public manner, i-e, through THE MARINE RECORD, that such is not the case and Forrest's Silver Bronze Packing" has never failed in a single instance to do its work satisfactorily whenever it has been tried and there is no place in existence where it has been used and rejected. Perhaps stuffers had better depend on the merits of their goods instead of trying to hold their trade by decrying an article which will best them in any severe test. Forrest Silver Bronze Packing is not a stuffing and does not stuff the stuffing box. It packs the rod. It does not touch the walls of the stuffing box; it stops the steam right at the cylinder, not by excessive friction and pressure on the rod and against the stuffing box, but by simple contact with the rod. It simply touches all around the rod and has a ground joint between the two lower rings excluding the steam from the box—the springs used being on the studs outside and always to be depended on and never lose their temper by high temperature in the stuffing box, but at all times keep the packing in contact with the rod and seated at the ground joint.

If anyone wishes to know whose stuffing we are replacing with our Silver Bronze Packing, we have a long list of names, kinds and places to show, but we forbear. We do not consider any of the stuffing or any devices which press on the walls of the stuffing box to get a pressure on the rod as our competitors in any sense.

Is this news to your readers? It is certainly not very good treatment to us, and we wish to meet them before the public.

Yours very truly, Forrest Silver Bronze Packing Co.

CAPT. WILLIAM W. BATES, ex-commissioner of navigation, is not wholly satisfied with the public statements that have been made concerning the reasons for his resignation. He is quoted as saying: "It is not true that Mr. Foster has revised my report of 1891. He first rejected a review of our shipping history, apparently for the purpose of undermining the best argument that can be made for the protection of shipping in the foreign trade, and after I had carefully revised what matter remained, he suppressed the whole of it. It is therefore untrue that my report for 1891 has appeared in official form, and if it ever does, it will be because a higher authority than Mr. Foster directs its publication. Such republican politics as appears to be involved in this manifestation is something new to me. It may be Napoleonic, and I think it is. At first sight I don't like it, but I try to take life philosophically When I get into a bear garden I get out of it."

Correspondence.

☞ We do not hold ourselves responsible in any way for the views or opinions expressed by our correspondents. It is our desire that all sides of any question affecting the interests or welfare of the lake marine hould be fairly represented in THE MARINE RECORD.

MERCATOR PROJECTION THE BEST.

DETROIT, February 16th, 1892.

"Beginner," Ashtabula, has on several occasions given the readers of THE MARINE RECORD some questions to solve, though in finding the course from Buffalo to the Dummy at Point au Pelee by reckoning; he takes the longitude of Pelee Island light for the longitude of the Dummy, never minding an overland passage of 4 or 5 miles on Long-Point Island. By this ingenious letter he thinks to prove, that no Mercator charts are necessary for lake navigation. As he obviously compounds the finding of a course by reckoning, with the finding of a course by compass dials on the chart; it has escaped his notice, that, whatever the course from Buffalo to Pelee may be, the course at Buffalo is found in the lake charts ¼ point more northerly than at Pelee, on account of the conical projection on which the charts are drawn. Such errors in courses are impossible in Mercator charts; and as the avoiding of errors is of prime necessity in navigation, lake charts ought to be on Mercators projection.

Mr. Frank Henrich and others has taken the pains to show "Beginner" how such problems as azimuth's are easily solved. From a general point of view, the method used by Mr Henrich must be given the preference to any other, as by it, azimuths in north latitude are reckoned from north, and in south latitude from south, being easily remembered and not liable to mistake. The method to which "A sailor on deck" refers is in general use in the British navy, reckoning azimuths from south in north latitude and from north in south latitude. Both methods are in effect the same, the only difference consists in writing down the angle from the table. If for sine ½ A is substituted co-sine ½ A and the angle for sine ½ A = 52° 58′ the angle for cos. ½ A = 37° 2′ or (90°—52° 58′) consequently A = 74° 4′ from south, equal to 105° 56′ from north, or twice 52° 58′. By the first method the angle at the zenith in the spherical triangle between sun, pole and zenith is found; by the second method the outer angle supplementing the former to 180° is found. SPECTATOR.

PRACTICAL APPLICATION OF THE SHORT HAND AND GRAPHIC METHOD.

BY JOHN MAURICE.

In THE MARINE RECORD of December 31st, 1891, Mr. Louch presents an extract from his log book as pilot of the U. S. S. Michigan in 1885, whichis a valuable basis for the present illustration. Arranging his figures in a table so as to facilitate review we have:

From these figures it is evident that a mistake must be in the deviation for the courses S 2°.8 W and S 2°.3 W. the deviation differing 14½°. It appears further, that a small error exists in the deviation for N 64°.7 E and N 67°.5 E. Leaving these errors out of account, and considering the figures for the other courses to be correct, there remain four observations in the vicinity of the four quadrantal points by which we are enabled to find the magnetic forces of the vessel, and thus the deviations for all courses.

Comp. Co.	Dev.	Comp. Co.	Dev.
—	—	N 38° 6 E	13° W
N 46° W	12° E	—	—
—	—	N 64.7 E	23 W
—	—	N 67.5 E	20 W
S 50 W	26 E	—	—
—	—	S 38 E	27 W
S 2.8 W	2.5 W	—	—
S 2.3 W	12 E	—	—

As the observations are not exactly on the quadrantal points, we must make some allowance for that, before commencing to figure, by correcting the values as far as possible, where necessary. For the course N 38°.6 E the correction with reference to the deviation for N 64°.7 E and N 67°.5 E is found by interpolation to be about 2°, therefore, the deviation for NE will be nearly 15° W. For NW we have 12° E; and for SW and SE the change in the deviation is so small on account of the deviation being a maximum in the vicinity, that no correction may be required. Thus the observed values are: NE — 15°, SW 26°, SE — 27°, NW 12°, and the solution is as follows:

— 15	— 15	— 27
26	— 26	— 12
27		
—12	X = —41	Y = — 39
	X + Y = — 80	
53	X — Y = — 2	
— 27		
	$B = \frac{-80}{161 + 20} = -0.44$	
26 X ¾ =		
19.5 = 100 G	$C = \frac{-2}{181} = -0.01$	
G = 0.195		

From these figures follows that the force from induced magnetism is of the general order, but the force from permanent magnetism exceeds the ordinary average considerably, being nearly equal to half of the earth's horizontal force. The signs of B and C indicate, that the ship's polar force, that is its South pole, is located with reference to the ship's compass towards the stern, in that quarter of the vessel which is port, and very near the midline of the ship.

With the magnetic forces thus found the following deviation table for the U. S. S. Michigan is obtained by swinging the vessel, as it were, on paper, using the graphic method explained in the former article:—

Mag. Co.	Dev. P'ts.	Mag. Co.	Dev. P'ts.
N	¼ W	N	¼ W
N by W	½ E	N by E	½ "
N N W	¾ E	N N E	1 "
N W by N	1 E	N E by N	1¼ "
N W	1¼ E	N E	1½ "
N W by W	2 "	N E by E	2 "
W N W	2 "	E N E	2 "
W by N	2 "	E by N	2 "
W	2 "	E	2 "
W by S	2 "	E by S	2 "
W S W	2 "	E S E	2 "
S W by W	2 "	S E by E	1¾ "
S W	1¾ "	S E	1½ "
S W by S	1½ "	S E by S	1¼ "
S S W	1¼ "	S S E	1 "
S by W	¾ E	S by E	¾ "
S	—	S	—

From this table, referring to magnetic courses, is obtained the following table, by means of the method of parallel scales:

Comp. Co.	Dev. P'ts.	Comp. Co.	Dev. P'ts.
N	— W	N	— W
N by W	¼ E	N by E	¼ "
N N W	½ "	N N E	¾ "
N W by N	¾ "	N E by N	1 "
N W	1¼ "	N E	1¼ "
N W by W	1½ "	N E by E	1½ "
W N W	1¾ "	E N E	1¾ "
W by N	2 "	E by N	2 "
W	2⅜ "	E	2⅜ "
W by S	2¼ "	E by S	2¼ "
W S W	2¼ "	E S E	2¼ "
S W by W	2¼ "	S E by E	2¼ "
S W	2¼ "	S E	2¼ "
S W by S	2 "	S E by S	2 "
S S W	1½ "	S S E	1½ "
S by W	¾ E	S by E	¾ W
S	—	S	—

Comparing the deviations by observations, with the values obtained from this table, we have:—

Comp Co	Deviations. by Obs.	by Gra. Md	Comp Co	Deviation. by Obs.	by Grs. Md
—	—	—	N 38.6 E	13 W	13 W
N 46 W	12 E	14 E	—	—	—
—	—	—	N 64.7 E	23 W	20 W
—	—	—	N 67.5 E	20 W	21 W
S 50 W	26 E	27 E	—	—	—
—	—	—	S 38 E	27 W	24 W
S 2.8 W	2,5 W }	2 E	—	—	—
S 2.3 W	12 E }	.....	—	—	—

From which it appears, that the observed East deviations near the quadrantal points are too small and the West deviations too large, as if the compass was affected by a constant deviation of from 2° to 3° West. But, as the observations on the courses N 64°.7 E and N 67°.5 E show some small differences both ways, it is uncertain whether there was a constant deviation or not. The remaining differences, Mr. Louch is perhaps able to explain away, that his certificate as lake master may be changed from "excellent" into "unsurpassed"

COLORS NAILED TO THE MAST.

WASHINGTON, D. C., February 13, 1892.

To the Editor of The Marine Record.

Noting that you have been deceived by the enemies of the American ship that are now carrying high sail in Washington, into incorporating their lies in a short notice of my resignation as Commissioner of Navigation, I desire to say to my old friends, readers of your journal, that there is not a word of truth in the following statement:

"Mr. Bates made the blunder of giving out his annual report for publication, before it had been submitted to the Secretary of the Treasury. In the report he went out of his way to discuss the tariff, reciprocity, and other economic questions with an independence that was refreshing."

I sent you a clipping from the Washington *Star* (or a paper) a few days ago in which certain other lies were denied, which I hope you will publish. Briefly, in my forced resignation the friends of an American merchant marine have sustained a defeat at the hands of paid agents of the foreign steamship companies, their corrupted dupes in office, and the dirty scheming politicians combined. No true man can serve with enemies and spies, and long maintain his place, This is the philosophy of the difficulty. Yours truly, William W. Bates.

AN EXPANSION OF THE CURVE.

BUFFALO, N. Y. February 15, 1892.

To the Editor of The Marine Record.

Referring to my answer in your issue of 4th inst., in reply to "Beginner's" question or example, it should read S 74° 06′ 02″ W, or W by S ⅛ S nearly, instead of S 4° 06′ 02″ W, or W by S ⅛ S nearly, which appears in your issue of 4th inst. I cannot understand how that mistake occurred as I have a copy of the original before me; however, the course converted into points, corrects the above to any intelligent mind, as W by S ⅛ S nearly, reads S 74° 06′ 02″ W which is one and the same. Also I observed "Beginner's" correction to the Alt. and if the example was worked out by Alt. 24° 50′ instead of 4° 50′ it would undoubtedly give a different result, but withal, I cannot for the life of me determine the deviation of his compass by his example, and should he or anyone else accomplish it by this unknown rule (to the nautical fraternity) I should like to see it. I say again it is invariably applied the same way as it always was.

Now Mr. Editor, I am no aspirant to the title of critic or crank, but merely a plain, every-day son of Neptune. I have counted the number of stars in the Southern Cross, been to Tonawanda, Ashtabula, passed Pelee Spit and Light (Lake Erie) oftentimes, and sailed up and down from Buffalo to Chicago no less than sixteen times last season, but I never knew the distance between Buffalo and Pt. Pelee to be 181 miles, as given by "Beginner" in his example. calculated by Mercator's sailing. How he found it to be so much, I do not know, therefore I think that Mercator's projection must have stretched more than any lawyer's conscience, if there are 181 miles between Buffalo and Pt. Pelee. By none of the known methods can "Beginner" or I make it such, and if "Beginner" ever was on his nautical nut, I am seriously mistaken if he did not fall off when the expansion of the curve took place.

Don't go fault-finding with the charts, admitting that they are more or less defective, still the chart of Lake Erie will vindicate itself in relation to this example, but I will not vouch for the Lighthouse Book. "A SAILOR ON DECK."

TERRESTRIAL MAGNETISM.

(BY HENRY WILDE F. R. S.)

For a half century the science of Terrestrial Magnetism has been laboring under the burden of knowing no theory or working hypothesis that held out the least promise of correllating the heterogeneous mass of facts observed in all parts of the world, a statement that could hardly be made of any other important branch of science. Many volumes of observations upon the magnetic force and the movements of the magnetic needle have been produced, and yet with a feeling of discouragement, for lack of a plan upon which to arrange them. Were it not for the obvious advantages to navigation, the needs in connection with geodetic surveys, the suspicion that meteorology might have something to do with it, and the irresistible scientific instinct that every force in nature must be accounted for; the depression would have been overwhelming. * * *

The most ancient, as well as the most interesting observation of the declination in the North Atlantic, is that made by Columbus on the 13th of September, 1492, when he observed the needle to pass from the E. to W. of the meridian in latitude 28° N. and longitude 28° W.

Now, it is on record that as Columbus advanced westward from the Island of Ferro, he was amazed to find the third day after his observation of the variation, and when abont 300 leagues west of Ferro, that the needle again pointed to the pole star.) Historie del S. D. Fernando Colombo.—In Venetia, 1571, Chap, 17.)

Our author proceeds with a wealth of illustrations of agreement extending over such vast regions of the earth and such long ranges of time, descending to minute details usually, as to preclude the possibility that there is anything wrong with his general analysis. He concludes that the period of a complete rotation of the fields relatively to one another is 960 years, and not 648 years, as magnetic tradition has it, the 960 year period also agreeing with Sir. W. Thomson's value as given in a recent volume of reprints. The sea-areas are more highly magnetic, by reason (1) of the permanent low temperatures at the bottom of the ocean, which is favorable to high magnetism, and because shielded from the fluctuations of temperature caused by the heating and cooling of the land in diurnal and annual periods; and (2) by the fact that the ocean beds are thicker than the land areas, and therefore contain more of the ferruginous iron ore. The secular variations of the magnetic meridians show that they pass quite smoothly over wide ocean or over wide land areas, but that they appear to hang along the coasts, where the break or faulting seems to produce greater polarity along the north and south lines. The American north magnetic pole is, as it were, held or retarded in its recessional march westward by the permanent magnetism stored up and retarded by the cold and uniform conditions of temperature prevailing in that region. It will finally break loose and hasten to take up its place along with the more freely moving lines.

From the various movements of the declination and inclination needles, correlated with each other in time, direction and amount, on different parts of the earth's surface, the theory of a fluid interior may now be considered to be as firmly established as the doctrine of the diurnal rotation of the earth on its axis," p. 31. This reads in marked contrast to the words of Sir W. Thomson in the Treatise on Nat. Phil. II., p. 480 and p. 485, which says, "The earth, although once all melted; or melted all around its surface, did, in all probability, really become as solid at its melting temperature all through, or all through the outer layer, which had been melted; and not until the solidification was thus complete, or nearly so, did the surface begin to cool;" and, "regarding the present conditions of the earth's interior, it is not, as commonly supposed, all liquid within a thin solid crust of from 30 to 100 miles thick, but it is on the whole more rigid, certainly, than a continuous solid globe of glass of the same diameter, and probably than one of steel."

Inasmuch as magnetism is in reality founded upon the same Newtonian law as the force of gravitation, we may expect it to go hand in hand with that fruitful aspect of the law, in unfolding the secrets of nature. If this is so, then also the indications will not be misleading, that terrestrial magnetism is rapidly emerging from that helpless condition in which it has so long been hindered from fulfilling its true mission in the service of science.

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CLEVELAND, O., FEBRUARY 18, 1892.

LAKE HULL INSURANCE.

The feeling that seems to be prevalent in insurance circles that the London Lloyds have had enough of the Lake business, and will not be a prominent factor in hull underwriting does not seem after careful investigation, to be substantiated by the actual facts.

London Lloyds, through their New York brokers, are, and will continue to reach out for lake hull insurance, and their action will be felt this year as it never has been felt before by the regular Lake companies.

A strong effort ought to be made towards meeting this aggressive, and what is likely to prove a successful effort to gather in the desirable insurance. It would seem that the lake underwriters would appreciate the strength of the enemy and sink their difference and unite in an effort to crush the invader.

But, alas, they seem unable to meet on a common ground for safety and mutual protection, and the coming season will undoubtedly see a war in rates never before known.

The first step towards the demoralization is the proposed discontinuing of the Inland Lloyds. The Lloyds have been the sole remaining prop to something like unanimity in hull rates. It was the base and starting point for a hull tariff, and its discontinuance means the removal of the last restraining influence, and the beginning of a struggle that will result in a season of disaster to some of the companies.

The battlefield is conceded to be Cleveland, and at that point the contending forces from Buffalo and Chicago will probably meet and the war rage thick and fast.

A canvass of the situation to-day reveals some curious points, some of what are known as the conservative underwriters, are not disposed to altogether quit the field, but will remain in, to the extent of leading the pugnacious members a lively dance, trusting, by a close inspection of risks, and a careful grading of lines to show at the close of the season but a small deficit. They seem to be thoroughly aroused and are willing to help bring matters to a crisis, feeling that the old adage "the survival of the fittest" will be exemplified, and that a generous boiling down of antagonistic influence will show a future good result.

While the fight is raging between the contending Lake factions, the London Lloyds will be quietly absorbing the gilt edge risks. Much, by the way, has been written about the London Lloyds, and not in a favorable way, but the assured can, no doubt, feel satisfied that there is a unity of action in that great body and what it says goes.

It is a good thing to know what to expect and what to rely upon and the Lloyds rates will not be subject to a daily, and for that matter, perhaps, an hourly revision as will be the case with the Lake companies, as it is plain to be seen that no rate named by the Lake companies can be really considered to attach until the actual issuing of the policy of Insurance.

It is rather difficult to ascertain the result of last season's writings, as the companies seem to be unusually reticent as regards the outcome; but enough is known by those on the outside to indicate that the season was not really disastrous to any company, although the balance to credit must have been insignificant in many cases.

Looking at the situation from the Owners' stand-point, one can but regret the present condition, in that, it brings no appreciable benefit to the assured. What an owner wants is good sound insurance, an honest policy and prompt settlement of losses, should any occur. The trifling difference apparent in a cut of rates is offset in the uncertainty and vexation attending placing the insurance and the delay in settling just claims.

Claims for the season of 1891 have been delayed as never before, and this serious objection will probably be largely augmented another year.

The Owners are always well satisfied to pay a fair rate provided it is a uniform one and the same as paid by their competitors. They never can be truthfully taxed with trying to shade rates, to get a little lower rate as the term goes. The great owners at Cleveland are above such picayune methods as these. They are intelligent, sound and liberal minded men, who ask for nothing without giving substantial reasons for so doing, and they have not forgotten the illiberal treatment accorded them when they laid good arguments before the Underwriters in 1891 and asked for relief only to be met with a united affront on the part of the Underwriters and the statement that such relief could not consistently be granted.

What the Owners' feelings were, and what their opinion of the earnestness of the reply given them was, can be conjectured, when shortly after their pilgrimage to the dictators they were approached by the same sturdy defenders of the tariff, and a discount freely offered and practically thrust upon them, vastly in excess of what they asked and what, under the conditions and terms named by them, they had a right to expect.

No element would rejoice more than the great, honest and intelligent body of Owners on the Great Lakes to-day to see the Lake Underwriters conduct their business on business lines, and to eliminate from their proceedings, the petty jealousies and struggles for supremacy.

If the home offices would give this vast and growing business the attention it deserves, and take a personal interest in it, they would find it a legitimate and proper field to continue in and a source of profit to their stockholders. They have the matter in their own hands, and it is a great pity they do not, many of them, appreciate the magnitude of the business and that it is an easy matter by their personal investigation and control, to eliminate the bad features that have crept in, owing largely to their own indifference.

NATIONAL SUPERVISION FOR LAKE SHIPPING OFFICES.

It is now time for the Bureau of Navigation to turn its attention to the thousands of citizens engaged in the maritime service on these inland seas, and by so doing, exercise the duties entrusted to its care.

The fact that no official cognizance of the services in which, at least, thirty thousand citizens are engaged, has hitherto been somewhat overlooked, yet, these men are serving under the general superintendence of the Commissioner of Navigation, who is empowered under the direction of the Secretary of the Treasury, to duly and legally care for the commercial marine and merchant seamen of the United States so far as vessels and seamen are not under existing laws, subject to the supervision of any other Officer of the Government.

How far this supervision has been carried out on the Great Lakes ought to become known, and this too for obvious reasons. Let us assume a case which occurs more or less frequently every season: A vessel leaves port with an untold crew, in so far as numbers are concerned, and an unknown crew in so far as an official list of names not being recorded. She founders, or meets with similar mishap, whereby all hands lose their lives, and in this sad, though too frequent event, there is not a person on or off the Great Lakes who can even guess at the individuality which has been wiped out of existence through the casualty. Further than this, there is not a government official, bureau or department, that is aware, or can even closely approximate the number of persons engaged each season in earning a livelihood by sailing on the lakes. Another phase of the question comes before us when we ask or look for the custodian of a deceased seaman's wages and effects. A mariner may lose his life at any period during the season of navigation and in many cases there is wages, more or less, due the lost seaman; into whose hands should this hard earned moiety be placed? And for the hundreds who have been lost on these waters, into whose hand has the money been placed hitherto? We opine that the Secretary of the Treasury, Judge of the Circuit Court for the district to which the vessel belonged, the Commissioner of Navigation or the Collector of Customs, each stand ready to repudiate the holding of any monies turned over from the amounts due to deceased lake seaman, and yet there must have been many such cases in the past, as there may be in the future. We know of a surety where many of these amounts have gone, and to the credit of the masters and owners on the lakes we also know that on many cases every effort has been made to find parents, kindred or friends, to whom it was thought these funds would do some good. Whether they were justly entitled to receive the amounts in all cases is beyond our ken.

A digression is somewhat pardonable in this connection, though to come back to our subject of lake shipping offices we may point to the regularly increased demands made upon vessel-owners and seaman's organizations to establish shipping offices at lake ports, each purely in the best interests of commerce according to the diverging views not unfrequently found between the owning and sailing community.

The present immense and the future unlimited volume of transportation on the Great Lakes requires that a Government supervision should be held over this vast commerce at the principal ports of entry, and it would seem that, Sec. 4503 in the laws for merchant seamen relating to coast ports should include such ports of entry on the lakes as their volume of shipping is justly entitled to in comparison with coast ports, nor should private earnings be especially taxed, or questionable interests be allowed to dominate over a feature which is essentially a national one in so far as a supervision of commerce is affected.

Sec. 4503 which we have just quoted, says:

"In any port in which no shipping commissioner shall have been appointed, the whole or any part of the business of a shipping commissioner shall be conducted by the collector or deputy collector of customs of such port; and in respect of such business such custom house shall be deemed a shipping office, and the collector * * * be deemed a shipping commissioner."

The general duties of a shipping commissioner is to afford facilities for engaging seamen by keeping a register of their names and character. To superintend their engagement and discharge. To provide means for securing the presence on board at the proper times of men who are so engaged and to perform such other duties relating to merchant seamen or ships as may now or hereafter be required by law.

All unbiassed men would hail the advent of such officials as being for the best interests of lake commerce, Federal officers duly empowered and clothed with all the dignity of the United States laws they would see *bona fide* engagements properly carried out both in sail and steam and in a great measure prevent the constant friction which has been so prominent in shipping circles during the past several years.

It would therefore now be in order to place in the hands of our legislators a strong petition asking for a share of the facilities offered to the United States mercantile marine at coast ports in the establishment of United States shipping offices at the principal ports of entry on the lakes. Changes in crews and other particulars might be duly certified every two, three or six months in each district, and a faithful record kept of every mariner sailing on the lakes, a feature by the way which is now completely neglected, only in so far as the local inspectors issue licences to officers, and the custom house freight statistics, cover the ground.

That shipping commissioners have hitherto only been appointed for coast ports is no reason why they may not now be appointed on the lakes. The very fact that shipping offices, shipping masters, clerks and assistants, are found already established, and that there is an urgent demand for more of these offices, is *prima facie* evidence of their necessity. Instead of private means being used to bolster up and facilitate the commercial marine of the lakes, the Bureau of Navigation ought to have been approached with a representation of the entries and clearances at lake ports, so that suitable means might have been taken to meet the demands of commerce by appointing duly authorized officials to subserve the best interests of lake commerce by superintending the requirements of so important and national a service.

There is yet ample time to establish properly authorized shipping offices, to which the present system would prove a valuable auxiliary and be the means of holding the men together previous to their being duly accounted for by the shipping commissioner. Such a system is not one whit in advance of the times and is the only proper method by which the merchant seamen of the lakes should be ruled.

INLAND LLOYDS.

An effort is now being made to hold a meeting of the Inland Lloyds at Buffalo on Tuesday, March 1. It is fully time that steps were being taken to post the vessel register up to date and it is to be hoped that the meeting will be well attended and the proper officials authorized to continue this important work.

Among the many rumors, each perhaps containing its quota of spare talk, we have heard that several large agencies proposed getting up their own register, but the inconsistency, and for that matter absurdity, of such a proceeding leads us strongly to the belief that lake companies will not thus openly declare war upon each other at a time too, when consolidation is more to the interests of all concerned than a break away from the ranks would be, besides office registers are too general and perhaps too elastic.

It goes without saying that no one office would attempt anything more than a cursory examination of a few risks and that the underwriters would use the 1891 Register as a guide and starting point from which to inaugurate a merry war in rates. Hence, endless confusion would be the inevitable result, and in case of different owners the policy values would be in few instances similar on a vessel, this, of course, would be a most troublesome matter to overcome in the case of adjustments.

No doubt the lake companies could stagger along this year in a haphazard sort of fashion on the strength of the 1891 register, yet, there can be no question but that

prudence emphatically dictates the continuing of the Inland Lloyds Vessel Register and no tenable grounds can be advanced so far as we can see for its discontinuance, abbreviation, or neglect.

VESSELMEN AS WEATHER OBSERVERS.

We have received from the United States Department of Agriculture, Weather Bureau, through the marine agent for the lakes, a sample outfit of the instructions, chart, and forms ruled for recording simultaneous meteorlogical observations. This outfit will be supplied to all lake shipmasters desirous of becoming voluntary observers of the Weather Bureau. Observers in charge of stations are requested to extend all possible courtesies and to furnish all practicable information to lake shipmasters who desire to aid in the determining of reliable data relating to the Great Lakes. All voluntary observers of the Weather Bureauare furnished with copies of the publications of the bureau which are printed for general distribution, the name and address of the observer being recorded at Washington on receipt of the first report. In the event of all the data contained in the printed forms not being available, it is asked that the position of the vessel at the time of each observation, together with the direction and force of the wind at the time, be entered according to the given scale. There will also be a system inaugurated to ascertain the set and drift of all lake currents through the agency of bottle papers carefully distributed throughout the season of navigation on the several lakes. The Weather Bureau deserves great credit for the praiseworthy efforts now being made to learn something of the physical geography and meteorology of the Great Lakes. Vesselmen in active service either on sail or steam, and the members of the several branches of the E. M. B. A. are requested to send their address to the Marine Agent, Weather Bureau, Cleveland, O.

LIEUT. A. C. BAKER, of the U. S. Navy, detailed for service in connection with the World's Exposition, has been placed in charge of the Marine Division of the Department of Transportation Exhibits. Provision has been made for a magnificent marine exhibit. American shipbuilders and marine interests in general, have never yet had such an opportunity to place themselves before the country in so favorable a light and they ought not to be found wanting if patriotism and pride in the maritime interests of the United States count for anything. Water transportation can be properly represented and Lieut. Baker is anxious to do all in his power to have the marine department fully abreast of the times and representative of American shipbuilding, owning and sailing interests.

Judge Severens, Detroit, dismissed the libel of Pittman & Dean against the steamer Samuel Marshall last Saturday. The case is of considerable interest to vessel men and dealers in vessel supplies from the fact that it involves the liability of vessels for supplies furnished them while under charter. The Samuel Marshall was owned by parties in Buffalo and elsewhere and chartered to the J. E. Potts Salt and Lumber Co. The libelants furnished her with coal and collected their bills for a number of months from the salt and lumber company. On one or two occasions an extension of time was asked for and granted, and the libelants accepted the paper of the salt and lumber company and receipted the bills. At the time of the Potts failure a considerable amount was then due, being covered by acceptances made by the company. These of course were worthless and Pittman & Dean seized the vessel as security. Judge Severens found the above facts to be true, and also that the libelants extended credit„not to the vessel, but to the salt and lumber company, they believing, however, that they had a lien on the vessel under the maritime law. "It is my opinion," said he, "that the facts were here sufficient to apprise the libelant that the vessel was not in the service of the owner, or at least to have put them upon inquiry as to how the fact was." The case derives its importance not from the amount involved, which is less than $1,500, but from the fact that there are a number of cases pending involving similar facts. It has generally been considered that all the supply man had to do was to furnish supplies to the captain and take advantage of a lien on the vessel, regardless of whether the owner was managing the vessel or not.

AN ATLANTIC RECORD.

The handsome steel steamyacht Wadena, built at the yards of the Cleveland Ship Building Co., and sent down to the coast just previous to the close of navigation has arrived all well at Cadiz, Spain. Owing to the increased number of fittings and a larger equipment of machinery than was originally intended the Wadena drew more water and had consequently less freeboard than some local wiseacres imagined was safe for a winter's voyage across the Atlantic, the arrival of the Wadena in Cadiz has fully demonstrated her seagoing qualities, especially when the terrible gales which have swept over the Atlantic during the past thirty days is taken into consideration.

The Wadena left New York and after a spin of 1810 miles to Barbadoes she cleared for St. Vincent in the Cape de Verde Islands, duplicating the former distance very nearly, from St. Vincent to Cadiz is about 1570 miles so that if the Wadena steered "as the crow flies." She covered a distance of nearly 5,300 miles on her maiden trip.

The Wadena is the first lake built yacht that ever cossed the Atlantic and in the first year that ever a lake vessel steamed across, the "whaleback" having crossed a few months previously.

Mr. Wade, Jr., to whose order the Wadena was built is highly pleased with her and compliments her builders the Cleveland Ship Building Co. on her excellent seaworthy qualities.

THE TWENTY FOOT CHANNEL.

The delegates from the Detroit Deep Waterways Convention when before the committee at Washington, stated that by a total expenditure of $30,000,000, from the foundation of the Republic until now, on improvements of navigation on the Great Lakes, a saving was made during the past year alone, of $150,000,000 on freights in excess of all the public appropriations. The average cost per mile of transporting a ton of freight from Duluth to Buffalo by water is less that 1½ mills; the average cost by railway is 9 mills; the lowest railway rates are 4½ mills. An additional depth of water necessarily would make further reduction in lake rates.

The tonnage of lake vessels passing through the Detroit river is greater by 3,000,000 tons than that of all ships clearing in the ports of London and Liverpool in a year. When the Erie Canal is open, average railway freights from Chicago to New York are 3½ cents per bushel of wheat; when the canal is closed they are 7½ cents.

At a cost of less than $3,500,000, it is estimated that a twenty-foot channel can be secured through the Great Lakes. This expenditure ranging through the period of six years necessary for the completion of the improvements hardly would be noticed as an item of increase in our national revenue, while three-fourths of it would go into instant circulation among laborers and manufacturers of implements. The proposition to facilitate commerce by expending so comparatively small an amount ought to receive dispassionate and non-partisan consideration in Congress, and the sum required appropriated in the interests of national economy.

APPOINTMENTS OF OFFICERS.

The master and engineers engaged for Captain James Davidson's fleet for 1892 are as follows: Capt. A. A. Cox, Capt. M. Madden, Captain Geo. W. Pardee and Capt. Geo. W. Starkey; Capt. Thos. E. Black, will sail the Oneida—Engineers—John Connolly, George McMonagle, C. H. Burke, Wm. Kincaid, J. H. Pierce. The above named officers have not yet been given their several steamers but are engaged preparatory to assignment.

The Howard Towing Association, Port Huron, Mich. Steamer Alanson Sumner—Capt. Christopher Smith, Engineer Thos. Abernethy; Howard—Capt. Edward Allum, Engineer Albert Simpson—W. B. Castel, Capt. William Toben, Engineer Peter Finney; Geo. A. Brady—Capt. John Griffin, Engineer Jacob Hendricks.

S. H. Boyce, Grand Haven, Mich., has appointed the following officers to his tonnage: Steamers Mary E. Boyce—Capt. W. F. McGregor, Engineer Michael Maher; Ionia—Capt. Frank VanPatten, Engineer John Farnam; Charles Street—Capt. Thomas McCambridge, Engineer H. O'Hara. Schooners: M. A. McGregor—Capt. D. F. Miller; R. Howlett—Wm, Tremper.

Capt. Watts, last season in the Menominee Transit Line steamer Norman will probably take charge of the United States lighthouse tender Warrington during the coming season, this appointment however has not yet been officially confirmed.

Pennington Line—C. B. Lockwood—Capt. Jolly; Geo. Spencer—Capt. McManus, vice-Capt. Cowan; B. L. Pennington—Capt. C. W. Lockwood.

Capt. Harry Zealand has been appointed master of the large steamship E. C. Pope. The Pope was built and launched last year by the Detroit Dry Dock Co. She is the largest as well as one of the fastest steamers on the lakes. Capt. Zealand formerly commanded the Ontario, of the Beatty Line.

Capt. C. H. Chamberlain, last year on the steamer John Mitchell, has been appointed master of the big steel steamer being built by Wheeler at Bay City for Hollister Bros. and others. Capt. Cowan last season in the Geo. Spencer has been appointed master of the John Mitchell.

The N. Holland fleet. Propeller C. F. Curtis—Capt. James Cunningham, Engineer not yet appointed. Schooners, Mabel Reed—Captain Peter Johnson; T. S. Fassett—Captain Albert Renders, N. C. Holland—Capt. Peter Keischgens.

Ashley & Dustin, managers of the Frank E. Kirby, have appointed Capt. A. J. Fox, Chief Engineer Edward Perry, Mate Hugh McAlpine and Clerk W. H. McFall, Jr., as officers of their Lake Erie "greyhound" passenger steamer for the season of 1892.

Alger Smith & Co., have made the following appointments. Propeller Volunteer—Capt. Thos. Hackett, Engineer P. B. McCabe; Gettysburg—Capt. W. H. Rolls, Engineer W. P. Wenner. Tug Torrent—Capt. S. H. Currie, Engineer J. M. Cronenweth.

Capt. Alvin Neal has made the following appointments: steamers, Gogebec, Capt Wm. Neal; Newysgo, Capt John Jenkins; B. W. Arnold, Capt. Al. Neal; Pawnee, Capt. E. Davis. The masters to the consorts of these steamers have not been appointed yet.

The general manager of the Detroit Grand Haven & Milwaukee Railway, has made the following appointments: Steamer City of Milwaukee—Capt. W. H. Smallman, Engineer C. L. Barron. Propeller Wisconsin, Capt. Thos. Honner, Engineer A. Currie.

J. Emory Owen Trans. Co., has appointed to the propellers John Owen—Capt. E. F. Thorp, Engineer Edward Haycox; J. EmoryOwen—Capt. J. P. Young, Engineer Martin Delanty. Schooners, Michigan—Capt. F. J. Cadotte; Nicholson—Capt. Wm. Smith.

The W. H. Wolf will be officered as follows: Propellers, William H. Wolf—Capt. Wm. Land, Engineer Thos. Allbright; Thos. Davidson—Capt. J. H. Coleman, Engineer Wm. Carananugh; Fred Pabst—Capt. L. W. Young, Engineer M. Tower, Geo. H. Dyer—Capt. Wm. Jamison, Engineer Thos. Haig; F. Shlesinger—Capt. D. P. Craine, Engineer—.

The Port Huron & Duluth Line, have made their appointments: Steamers, Colorado, Capt. Donokey, Engineer Chas. Burch; Osceola—Capt. Thomas, Engineer Wm. Elliot.

Capt. Wm. Dulac of Mt. Clemens has made the following appointments for his steamers: Steamers, F. R. Buhl, Capt Woodgriff; Canisteo—Capt. W. J. Lynn; A. Weston—Capt. M. Hyde; Alleghany, Capt. W. Sunderland. The masters of the consorts to this fleet have not been appointed.

INVESTIGATING AZIMUTH'S.

February 16, 1892.

To the Editor of The Marine Record.

Being interested in matters connected with navigation, etc. I noticed an article from "Sailor on Deck" on azimuths and how to obtain the same, making use of the words, "remember never reckon an azimuth from north on Lake Superior," as I am like "Beginner" making use of the same error. I will herewith endeavor to find the sun's true bearing or azimuth by data given by "Beginner" as calulated by F. Henrich and compare results from following data:—

Lat.	47°	1′	P. D.	97°	9′		Co. Sec. Lat.			.16635
True Alt.	4	52 10	Lat.	47	1		" " Alt.			157
Corr. Decl.	7	09 00	Alt.	4	52	10	Co. Sine ½ Sum			9.42644
							" " Remndr			9.96196
			Sum	149	2	10				
			½	74	31	5				19.55632
			Rem	23	38	0			½	9.77816

Cosine of ½ Az. angle 53° 8′ (2)

True bearing of sun North 106° 16 W assuming a p. m. sight

SECOND METHOD.

To find the Azimuth angle according to diagram.—

P S =	97° 9′				
P Z =	43 0				
Z S =	85 8				
	125 17				
S =	112 38 30	.....	Log Sine =		9.96522
S — PS =	15 29 30	.....	" " =		9.42667
P Z =	43 =	.....	" " =		9.83378
Z S	85.8	.....	" "		9.99843
				½	19.56148
					9.78074

Cosine of ½ Angle ∠ = 52° 52′ (2)

Ans. true bearing Sun N 105° 44′ W. An afternoon sight.

Comparing the means of my methods	106°.00′
	105.56
With Henrich	
Diff. of our Cal	0°.4′

"Sailor on Deck" finds azimuth to be W by S ⅝ S or by my method it shows N 108° 17′ W., 106° by work as above, difference of our result 2° 17′.

Would like to hear from some one more competent than myself on this subject as to which of us is in error.

CANNUCK.

THE old cast iron valve frames of the lock at St. Mary's Falls Canal are being replaced with new steel ones. Two new Morris centrifugal pumps capable of emptying the lock of water in eight hours, have been secured and will be kept in readiness for emergencies. The water is now six inches lower than at this time last year.

WE have been favored with advanced proof sheets of Beeson's Inland Marine Guide for 1892, now in press. We note that in nearly all cases the names of the Line or active managers of vessels are given in place of the person whose name appears on the enrollment sheet. The alphabetical list of vessel names and the general detail of the same is far in advance of the 1891 edition. There are a number of illustrated inserts, interesting reading articles etc., which makes the annual a more complete work than has ever been published before.

Notes.

ACCORDING to Section 3 Revised Statutes of the United States. A vessel is defined as "every description of water craft capable of being used as a means of transportation on water"

THE Montague Iron Works, Montague, Mich., has just closed another contract with the A. Booth Packing Co. of Chicago, Ills., for a steeple compound marine engine with cylinders 14 and 28 inches by 20 inch stroke, to be placed in the tug Hunter at Manitowoc, Wis. The above engine makes four compound marine engines being built at these works at present.

SURVEYS at the Isthmus of Panama demonstrate that the Atlantic Ocean is six and a half feet higher than the Pacific. It was formerly thought that the Pacific was anywhere from six to six hundred feet higher than the Atlantic.

TEN years ago there were probably in the private shipyards not a score of scientifically educated draughtsmen. Now, in every yard draughtsmen can be found who are competent to make all the calculations for strains and stability; indeed, a draughtsman who is not well up in the science of naval architecture can hardly get employment. We have dwelt upon this point because it emphasizes and proves our contention that the present improvement in ships is due entirely to the better education of those who design and build them. We have still many maritime losses of a preventable nature, and those who will take the trouble to analyse the findings of the courts of inquiry, as given in our columns every month, will find that the two principal causes of disaster are negligent and careless navigation, and neglect to comply with the Rule of the Road. These causes are, in most cases, the direct consequences of a want of professional skill and training on the part of the captains and officers. It is a singular thing that while all the agitation on shipping questions has been going on, as it has for the last twenty years, it has never occurred to the ship-owners, the underwriters and the Board of Trade that the whole subject of the safety of life and property at sea is included in, and essentially dependent upon, the proper technical education of those who design, build, load and navigate ships and steamers. —*Nautical Magazine.*

THE Cunard Line Steamer Allepo recently fitted with "Serve" ribbed boiler tubes has fully demonstrated the value of this admirable specialty. Messrs. Cramp and Co. also fitted the Atlantic Liner Pennsylvania with the "Serve" tubes when she received her new boilers, and a large percentage of saving in fuel has resulted therefrom. Charles W. Whitney 81 and 83 Fulton street, New York, represents the agency for the "Serve's patent ribbed boiler and stay tubes" and the "Purve's patent ribbed boiler furnace flues".

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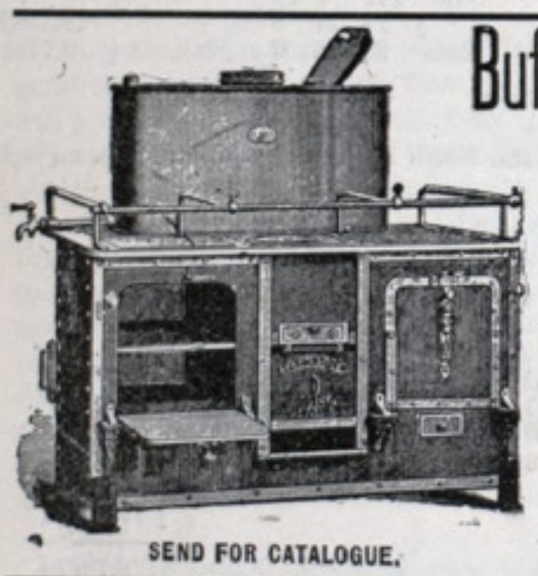

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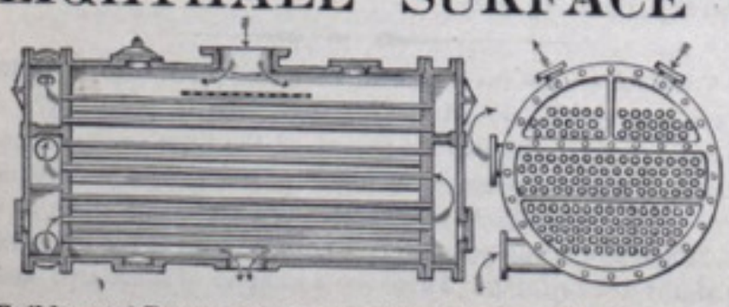

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LOSSES PAID, over - - 1,500,000

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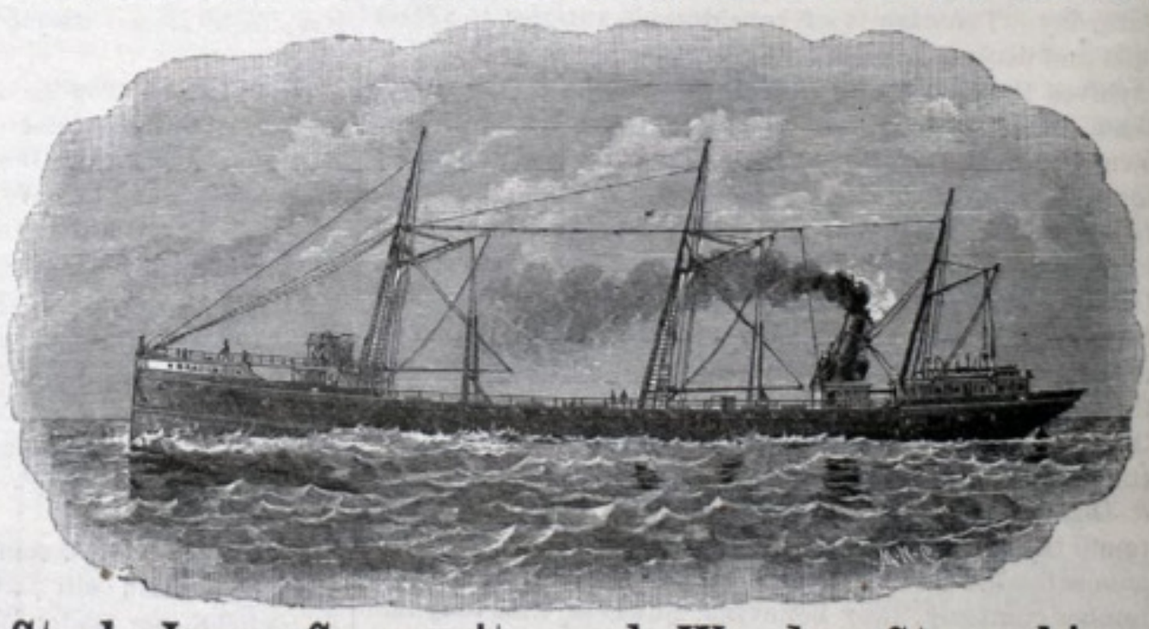

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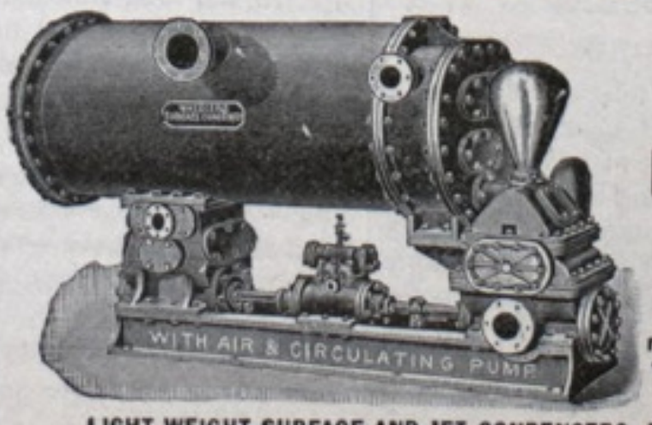

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